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Nebraska Summary: S163 Ford 7840 12x12

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SUMMARY OF OECD TEST 1437—NEBRASKA SUMMARY 163

FORD NEW HOLLAND 7840 PULSECOMMAND DIESEL

16 SPEED

Location of Test: Silsoe Research Institute, Wrest Park, Silsoe Bedford, England MK45 4HS

Dates of Test: August to September, 1992

Manufacturer: FORD NEW HOLLAND LTD, Basildon, Essex, England

FUEL and OIL: Fuel No. 2 Diesel Cetane No. 54.5 Specific gravity converted to 60°/60° F (15°/15°C) 0.8400 Fuel weight 6.99 lbs/gal (0.838 kg/l) Oil SAE 15W40 Oil consumption for 10 hours NA Transmission and hydraulic lubricant SAE 80W Front axle lubricant SAE 80W

ENGINE: Make Ford New Holland Diesel Type six cylinder vertical Serial No. GA340273 Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 4.4" × 4.4" (111.8 mm × 111.8 mm) Compression ratio 17.5 to 1 Displacement 401 cu in (6585 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator Oil filter one full flow cartridge Fuel filter two paper elements Muffler underhood Exhaust vertical Cooling medium temperature control thermostat and variable speed fan

CHASSIS: Type front wheel assist Serial No. BD 08016 Tread width rear 64.1" (1628 mm) to 79.8" (2028 mm) front 54.8" (1392 mm) to 84.3" (2142 mm) Wheel base 103.3" (2623 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial (4) range operator controlled powershift Nominal travel speeds mph (km/h) first 1.40 (2.26) second 1.72 (2.76) third 2.10 (3.38) fourth 2.57 (4.13) fifth 3.32 (5.34) sixth 4.05 (6.52) seventh 4.36 (7.01) eighth 4.96 (7.98) ninth 5.32 (8.56) tenth 6.05 (9.74) eleventh 6.51 (10.48) twelfth 7.95 (12.80) thirteenth 10.28 (16.55) fourteenth 12.56 (20.22) fifteenth 15.37 (24.74) sixteenth 18.78 (30.22) reverse 1.39 (2.24), 1.70 (2.74), 2.08 (3.35), 2.54 (4.09), 3.29 (5.29), 4.01 (6.46), 4.32 (6.95), 4.91 (7.90), 5.28 (8.49), 6.00 (9.66), 6.45 (10.38), 7.88 (12.68), 10.19 (16.40), 12.45 (20.04), 15.23 (24.51), 18.61 (29.95) Clutch multiple wet disc operated by foot pedal Brakes multiple wet disc hydraulically actuated by two foot pedals which can be locked together Steering hydrostatic Power take-off 540 rpm at 1890 engine rpm and 1000 rpm at 2103 engine rpm (For US market—540 at 1890 rpm and 1000 at 2049 engine rpm) Unladen tractor mass 10555 lb (4788 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance figures on this summary were taken from a test conducted under

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
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MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—985 rpm)					
90.4 (67.4)	2070	5.29 (20.04)	0.409 (0.249)	17.08 (3.37)	

VARYING POWER AND FUEL CONSUMPTION

90.4 (67.4)	2070	5.29 (20.04)	0.409 (0.249)	17.08 (3.37)	Air temperature
79.3 (59.1)	2147	4.85 (18.35)	0.427 (0.260)	16.36 (3.22)	75°F (24°C)
59.9 (44.7)	2154	3.93 (14.89)	0.459 (0.279)	15.23 (3.00)	Relative humidity
40.0 (29.9)	2171	3.09 (11.71)	0.541 (0.329)	12.93 (2.55)	35%
19.8 (14.8)	2185	2.27 (8.61)	0.802 (0.488)	8.72 (1.72)	Barometer
—	2219	1.63 (6.17)	—	—	30.0" Hg (101.5 kPa)

Maximum Torque 278.7 lb.-ft. (377.9 Nm) at 1197 rpm

Maximum Torque Rise 21.5%

Torque rise at 1600 engine rpm—14%

DRAWBAR PERFORMANCE (UNBALLASTED—FRONT DRIVE ENGAGED) FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—6th (6L) Gear									
75.2 (56.1)	7285 (32.4)	3.87 (6.23)	2068	5.5	0.505 (0.307)	13.86 (2.73)	189 (87)	61 (16)	29.6 (100.3)
75% of Pull at Maximum Power—6th (6L) Gear									
59.9 (44.7)	5520 (24.5)	4.07 (6.55)	2150	4.5	0.549 (0.334)	12.74 (2.51)	183 (84)	66 (19)	29.6 (100.1)
50% of Pull at Maximum Power—6th (6L) Gear									
40.4 (30.1)	3640 (16.2)	4.16 (6.70)	2168	3.2	0.659 (0.401)	10.61 (2.09)	185 (85)	66 (19)	29.6 (100.1)
75% of Pull at Reduced Engine Speed—7th (1H) Gear									
60.6 (45.2)	5530 (24.6)	4.11 (6.62)	2004	4.4	0.523 (0.318)	13.38 (2.64)	187 (86)	64 (18)	29.5 (100.0)
50% of Pull at Reduced Engine Speed—7th (1H) Gear									
40.9 (30.5)	3675 (16.3)	4.17 (6.71)	2010	3.3	0.592 (0.360)	11.82 (2.33)	185 (85)	64 (18)	29.5 (100.0)

**DRAWBAR PERFORMANCE
(UNBALLASTED—FRONT DRIVE ENGAGED)
MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kWh)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th (4L) Gear									
62.8 (46.8)	10410 (46.3)	2.26 (3.64)	2111	15.0	0.607 (0.369)	11.52 (2.27)	189 (87)	64 (18)	29.6 (100.2)
5th (5L) Gear									
72.8 (54.3)	8765 (39.0)	3.11 (5.01)	2066	7.1	0.521 (0.317)	13.42 (2.65)	189 (87)	64 (18)	29.6 (100.2)
6th (6L) Gear									
75.2 (56.1)	7285 (32.4)	3.87 (6.23)	2068	5.5	0.505 (0.307)	13.86 (2.73)	189 (87)	61 (16)	29.6 (100.3)
7th (1H) Gear									
74.0 (55.2)	6585 (29.3)	4.21 (6.78)	2067	5.0	0.513 (0.312)	13.63 (2.69)	189 (87)	63 (17)	29.6 (100.3)
8th (7L) Gear									
70.8 (52.8)	5520 (24.5)	4.81 (7.74)	2072	4.4	0.538 (0.327)	12.99 (2.56)	189 (87)	63 (17)	29.6 (100.3)
9th (2H) Gear									
73.0 (54.4)	5260 (23.4)	5.20 (8.37)	2068	4.2	0.519 (0.316)	13.46 (2.65)	189 (87)	63 (17)	29.6 (100.3)

TRACTOR SOUND LEVEL WITH CAB

dB(A)

Gear closest to 4.7 mph (7.5 km/h) 8th (7L) gear	78.0
Maximum sound level—7th (1H) gear	79.0
Transport speed—no load—16th (8H) gear	73.0
Bystander	—

TIRES, BALLAST AND WEIGHT

With Ballast

Without Ballast

Rear Tires	—No., size, ply & psi (kPa)	Two 18.4R38; **, 12 (83)	Two 18.4R38; **, 12 (83)
Ballast	—Liquid (total)	None	None
	—Cast Iron (total)	665 lb (302 kg)	None
Front Tires	—No., size, ply & psi (kPa)	Two 14.9R28; **, 12 (83)	Two 14.9R28; **, 12 (83)
Ballast	—Liquid (total)	None	None
	—Cast Iron (total)	715 lb (323 kg)	None
Height of Drawbar		18.7 in (475 mm)	18.7 in (475 mm)
Static Weight with Operator	—Rear	6945 lb (3150 kg)	6545 lb (2968 kg)
	—Front	5155 lb (2338 kg)	4175 lb (1895 kg)
	—Total	12100 lb (5488 kg)	10720 lb (4863 kg)

the OECD test Code II Restricted Standard Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1437**, Nebraska Summary 163, October 3, 1994.

LOUIS I. LEVITICUS

Engineer-in-Charge

R.D. GRISSO

M.F. KOCHER

K. VON BARGEN

Board of Tractor Test Engineers

**DRAWBAR PERFORMANCE
(BALLASTED—FRONT DRIVE ENGAGED)
FUEL CONSUMPTION CHARACTERISTICS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		Temp. °F (°C)		Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	cool- ing med	Air dry bulb	
Maximum Power—6th (6L) Gear									
75.1 (56.0)	7205 (32.1)	3.91 (6.29)	2074	4.4	0.506 (0.308)	13.81 (2.72)	189 (87)	61 (16)	29.7 (100.6)
75% of Pull at Maximum Power—6th (6L) Gear									
59.0 (44.0)	5440 (24.2)	4.02 (6.55)	2146	3.6	0.559 (0.340)	12.51 (2.47)	185 (85)	59 (15)	29.9 (101.1)
50% of Pull at Maximum Power—6th (6L) Gear									
40.0 (29.8)	3605 (16.0)	4.16 (6.70)	2168	2.5	0.636 (0.387)	10.99 (2.16)	185 (85)	59 (15)	29.9 (101.1)
75% of Pull at Reduced Engine Speed—7th (1H) Gear									
59.5 (44.4)	5455 (24.3)	4.09 (6.58)	1989	3.6	0.519 (0.316)	13.46 (2.65)	185 (85)	57 (14)	29.9 (101.1)
50% of Pull at Reduced Engine Speed—7th (1H) Gear									
40.1 (29.9)	3595 (16.0)	4.18 (6.73)	2012	2.5	0.593 (0.361)	11.78 (2.32)	185 (85)	57 (14)	29.9 (101.1)

MAXIMUM POWER IN SELECTED GEARS

3rd (3L) Gear									
60.3 (45.0)	12205 (54.3)	1.85 (2.98)	2133	15.2	0.613 (0.373)	11.40 (2.25)	187 (86)	57 (14)	29.9 (101.2)
4th (4L) Gear									
69.5 (51.8)	10980 (48.8)	2.37 (3.82)	2071	8.5	0.542 (0.330)	12.89 (2.54)	189 (87)	63 (17)	29.7 (100.6)
5th (5L) Gear									
73.9 (55.1)	8780 (39.1)	3.16 (5.08)	2072	5.4	0.511 (0.311)	13.68 (2.69)	189 (87)	63 (17)	29.7 (100.6)
6th (6L) Gear									
75.1 (56.0)	7205 (32.1)	3.91 (6.29)	2074	4.4	0.506 (0.308)	13.81 (2.72)	189 (87)	61 (16)	29.6 (100.3)
7th (1H) Gear									
74.2 (55.3)	6575 (29.2)	4.23 (6.81)	2068	3.9	0.511 (0.311)	13.68 (2.69)	189 (87)	61 (16)	29.7 (100.6)
8th (7L) Gear									
70.6 (52.6)	5495 (24.5)	4.82 (7.75)	2069	3.5	0.536 (0.326)	13.05 (2.57)	190 (88)	59 (15)	29.7 (100.6)
9th (2H) Gear									
73.4 (54.7)	5285 (23.5)	5.21 (8.38)	2068	3.3	0.516 (0.314)	13.55 (2.67)	190 (88)	61 (16)	29.7 (100.6)

SUPPLEMENTARY TESTS WITH 540 RPM PTO SHAFT POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kWh)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—590 rpm)					
90.0 (67.1)	2065	5.32 (20.12)	0.412 (0.251)	16.95 (3.34)	
Standard Power Take-off speed (541 rpm)					
87.6 (65.3)	1892	5.12 (19.38)	0.407 (0.249)	17.11 (3.37)	
VARYING POWER AND FUEL CONSUMPTION					
90.0 (67.1)	2065	5.32 (20.12)	0.412 (0.251)	16.95 (3.34)	Air temperature
78.7 (58.7)	2120	4.82 (18.25)	0.427 (0.260)	16.35 (3.22)	73°F (23°C)
59.3 (44.2)	2136	3.93 (14.87)	0.464 (0.282)	15.08 (2.97)	Relative humidity
40.2 (30.0)	2155	3.12 (11.82)	0.542 (0.330)	12.89 (2.54)	43%
20.0 (14.9)	2176	2.31 (8.75)	0.809 (0.492)	8.64 (1.70)	Barometer
—	2219	1.61 (6.11)	—	—	29.9" Hg (101.4 kPa)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None

Maximum Force Exerted Through Whole Range: 6610 lbs (29.4 kN)

i) Opening pressure of relief valve: NA

Sustained pressure with relief valve open: 2840 psi (196 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: At auxiliary service connection At remote hydraulic port

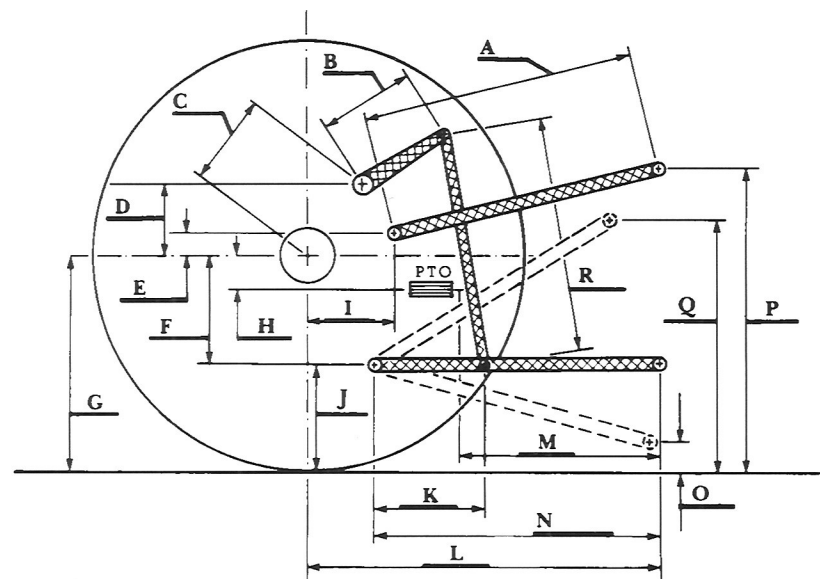
16.4 GPM (62.2 l/min) 21.4 GPM (80.9 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 15.2 GPM (57.4 l/min) 20.1 GPM (76.1 l/min)

Delivery pressure: 2175 psi (150 bar) 2320 psi (160 bar)

Power: 19.3 HP (14.4 kW) 27.2 HP (20.3 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	27.2	690
B	10.0	254
C	14.0	356
D	13.4	341
E	6.2	158
F	9.0	229
G	32.3	820
H	1.9	47
I	13.9	353
J	23.3	591
K	18.3	466
L	40.0	1017
M	22.0	560
N	36.0	915
O	7.9	200
P	47.3	1201
Q	34.1	865
R	32.7	830